CENTRAL INTELLIGENCE AGENCY REPORT NO.

# INFORMATION REPORT

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THIS IS UNEVALUATED INFORMATION

1. The All-Union Tool Scientific Research Institute (Vse-Soyuzny Nauchno Issledovatelski Instrumentalny Institut) is located at Number 49 Bolshaya Semenovskaya Ulitsa, Moscow, and adjoins the Moscow Tool Factory (Moskovski Instrumentalny Zavod or MIZ) in the grounds of which is the small Experimental Factory of VNII (Opytny Zavod VNII).

## History

2. The Institute was founded in October 1943 by decree of the Government. Its object is to work out the scientific, theoretical, and practical basic principles of the production and employment of tools, to standardize tools, and to publish technical information on tools.

3. In 1944 and 1945, VNII organized 18 laboratories and an experimental factory. The Institute and its experimental factory occupied part of the premises of the evacuated Moscow Tool Factory, although at that time a newly established factory was already working on the evacuated site. After the war, this factory became the new Moscow Tool Factory.

4. The following laboratories were organized by VNII:

a. Physical Research
b. Chemical
c. Metallographic
d. X-Ray
e. High Frequency
f. Welding
g. Mechanical Tests
h. Thermic
i. Hard Alloys
j. Casting
k. Pressure Treatment of Tools
l. Grinding and Polishing Tools (Zatochka I Dovodka Tools)
m. Increasing Durability of Tools by Chrome-Plating, Nitration, Nitro-cementation, and other processes.



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n. Tools
o. Study of Surface Quality
p. Measuring
q. Cutting Processes
r. High-speed Treatment of Metals

Production of Institute and Factory

5. The basic work of the Institute during the last two years (1948,1949) has been as follows:

a. Research work on questions concerning the employment of the most suitable tools for high-speed treatment of metals, in particular for high-speed milling.

b. The study of hard alloys of home production (produced at the Moscow Hard Alloys Factory), mainly of tungsten-titanium alloys.

c. The study of the rational shape of milling cutters (geometry of milling cutters).

d. The study of questions concerning the employment of the positive and negative front angle of the cutting edge of tools.

e. Methods of soldering on hard alloys.

f. The grinding of hard alloy tools by electric grinding without the use of abrasives.

6. The laboratories and experimental factory tested all kinds of tools made of hard alloys (chiefly type T 15 K 6: cutters, drills, milling cutters, reamers, countersinks, and others.

7. New designs for worm (chervyachny), face (tortsovy), and slit (prorezny) milling cutters, broaches (protyazhka), and all kinds of new tools were produced. Both the Institute and the factory helped the Moscow Tool Factory to create new types of broaches and other tools.

8. The factory produced a great number of samples of milling cutters of various diameters with negative front angles.

9. The Editorial and Publishing Section and the Technical Information Section published a large number of booklets and various kinds of information on the employment of milling cutters with hard alloys for industrial enterprises.

10. The Design Bureau worked out and the factory produced new designs of thread-cutting and boring attachments (golovka), new designs of adjustable screw-taps and dies, welded worm milling cutters, and a small number of assembled worm milling cutters.

11. New instruments have been produced for verifying the geometry of cutting tools (angle gauges of Professor Khaimovich, Engineers Pavlushkov and Zelikov.)

12. Original low-power high-frequency current plants have been produced for soldering on and welding on cutting tools, for example, welding machines of type AL-S-1.

13. The Technical Information Section published booklets for guidance in the method of thermic treatment of cutting tools with cooling to low temperatures (the method was worked out in the Thermic Laboratory).

14. The Standardization Section established several All-Union State Standards (GOST) for high-speed milling cutters, countersinks with detachable blades, turning recessing tools, certain types of reamers, and other devices.

15. The Institute worked out and tested methods for the production of files, and instructions and specialists were sent to the file factories at Ufass, Serpukhov, Voroshilovgrad to introduce these new methods.

16. The Institute rendered assistance to industrial enterprises of various ministries by the creation of special tools for various special operations. The Institute helped many Moscow factories to learn how to electro-weld hard alloys on to tools.

17. The factory does not produce in series but makes each type of new tool in a small number of examples and sends them to tool factories or tool shops with the appropriate information for serial production.

18. In 1949, up to December, 900 types of samples of various new tools were produced at the Experimental Factory: cutters, countersinks, milling cutters, reamers, made with hard alloys T 15 K 6.

## Personnel

19. Approximately 180 workers are employed in the Institute and about 220 in the factory. Work at the factory is conducted in one and two shifts.

20. Following are the names of some of the chief personnel:

a. Director of VNII: Engineer E.P. Nadeinskaya (woman), who is also Director of the Experimental Factory

b. Deputy Director for Scientific Section: I.I. Semenchenko, Professor, Doctor of Technical Science

c. Deputy Director of Administration: L. Ya. Belostotski.

d. Chief of Design Section and Bureau: Engineer V.M. Vorobiyev.

e. Chief of Standardization and Normalization Section: Yu. V. Tsviss, Engineer and Dr. of Technical Science.
His deputy: Engineer V. G. Zhilichev.

f. Chief of Editorial and Publishing Section: P.S. Kolosovskaya (woman)

g. Chief of Technical Information Section: P.I. Vaisberg.

h. Chief of Chemical Laboratory: A.I. Pokrovskaya (woman).

i. Chief of Welding Laboratory: Engineer N.A. Bukhman.

His assistants: Engineer K.P. Imshennik, Candidate of Technical Science
Engineer A.M. Lushnikov

j. Chief of Measuring Laboratory: E.M. Zelikov

k. Chief of Cutting Laboratory: Engineer S.I. Volkov assisted by:
Engineer L.P. Tsyganova (woman)

l. Engineer-Designers: G.V. Rodin (Stalin Prize Laureate)
G.E. Lukashevich
O.P. Fedorov and others.

m. Engineers: Gavrilov: Kraitman: Pavlushkov: Simonov, etc.

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n. The VNII has 46 scientific workers (professors, doctors, and candidates of Technical Sciences) working in the laboratories. These include Prof. Ya. M. Khaimovich, Dr. Tech. Sc. G.P. Zhebrovski, Dr. Tech. Sc. G.G. Volkov, Cand. Tech. Sc. P.P. Grudov.

o. Chief Engineer of Factory: N.I. Kulikov.

p. Chief Mechanic of Factory: A.I. Makeyeyev